

Patentee	Oliver	<b>COMMUNICATION REGARDING CERTIFICATE OF CORRECTION</b>
Patent No.	7,088,742	
Issue Date	8/8/2006	
Serial No.	10/008,658	
Attorney Docket No.	100.344US01	
Title: CONCURRENT TRANSMISSION OF TRAFFIC FROM MULTIPLE COMMUNICATION INTERFACES		

ATTN: Certificate of Corrections Branch  
Commissioner for Patents  
P.O. Box 1450  
Alexandria, VA 22313-1450

Patentee hereby requests issuance of a Certificate of Correction in U.S. Letters Patent No. 7,088,742 as specified on the attached Certificate (Form PTO/SB/44). Please find enclosed documentation supporting errors identified in the above noted patent, referred to herein as Exhibits A and B.

Exhibit A is a copy of pages 1 to 18 of an Amendment and Response and a copy of a signed Certificate of Transmission indicating the Response was submitted to the U.S. Patent & Trademark Office on January 17, 2006. Exhibit B is a copy of columns 9 to 14 of the issued patent.

With respect to the error in claim 4 of the issued patent, claim 4 as allowed (originally filed as claim 11 by Patentee) does not recite the phrase “having first number of timeslots” as recited in line 18 of column 9 of the issued patent in Exhibit B. As presented in Exhibit A, the claim calls for the phrase “having a first number of timeslots” (emphasis added). The identified error in claim 4 as issued constitutes an Office error and, as such, does not introduce new matter.

With respect to the errors in claim 11 of the issued patent, claim 11 as allowed (originally filed as claim 20 by Patentee) does not include a comma between “timeslots” and “each” in the phrase “number of timeslots each timeslot” as recited in line 46 of column 10 of the issued patent in Exhibit B. As presented in Exhibit A, the claim calls for a comma between the phrase “number of timeslots” and “each timeslot.”

In addition, claim 11 as allowed does not call for “timeslots” as recited in the phrase “wherein a timeslots of the first traffic” in line 65 of column 10 of the issued patent in Exhibit B. As presented in Exhibit A, the claim calls for “a timeslot” in the phrase “wherein a timeslot of the first traffic.” The identified errors in claim 11 as issued constitute one or more Office errors and, as such, do not introduce new matter.

With respect to the error in claim 19 of the issued patent, claim 19 as allowed (originally filed as claim 38 by Patentee) does not recite the phrase “wherein a number  $N_1$  of timeslots used for a load” as recited in line 46 of column 12 of the issued patent in Exhibit B. As presented in Exhibit A, the claim calls for the phrase “wherein a number  $N_1$  of timeslots used for payload.” The identified error in claim 19 as issued constitutes an Office error and, as such, does not introduce new matter.

With respect to the error in claim 22 of the issued patent, claim 22 (originally filed as claim 39 by Patentee) as allowed in Exhibit A does not recite the phrase “of the timeslots of the combined mapping the second” as recited in line 15 of column 13 of the issued patent in Exhibit B. As presented in Exhibit A, the claim calls for the phrase “of the timeslots of the combined traffic; and mapping the second traffic to a second portion.” The identified error in claim 22 as issued constitutes an Office error and, as such, does not introduce new matter.

With respect to the error in claim 25 of the issued patent, claim 25 (originally filed as claim 44 by Patentee) as allowed in Exhibit A does not recite the phrases “wherein a number ( $N_1$ ) of timeslots used for a load is” and “wherein the second traffic has a bit rate equal to some multiple ( $N_1$ ) of the incremental bit rate” as recited in lines 46 and lines 48 to 50 of column 13 of the issued patent in Exhibit B, respectively. As presented in Exhibit A, the claim calls for “wherein a number ( $N_1$ ) of timeslots used for payload is less than or equal to the first number of timeslots” and “wherein the second traffic has a bit rate equal to some multiple ( $N_2$ ) of the incremental bit rate.” The errors identified in claim 25 as issued constitute one or more Office errors and, as such, do not introduce new matter.

With respect to the error in claim 31 of the issued patent, claim 31 as allowed (originally filed as claim 50 by Patentee) does not call for “less than” in the phrase “less than or equal to 30” as recited in line 55 of column 14 of the issued patent in Exhibit B. As presented in Exhibit A, the claim calls for “less than” in the phrase “less than or equal to 30.” The identified error in claim 31 as issued constitutes an Office error and, as such, does not introduce new matter.

Patentee believes these corrections as specified are necessary due to the aforementioned Office errors in claims 4, 11, 19, 22, 25, and 31 (as issued) and therefore does not believe that any fee is due for issuance of a Certificate of Correction for this patent. However, if deemed necessary, the Office is authorized to charge any additional fees found due to Deposit Account No. 502432. Please contact the undersigned if you have any questions.

Respectfully submitted,

Date: October 25, 2008

/David N. Fogg/

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## UNITED STATES PATENT AND TRADEMARK OFFICE CERTIFICATE OF CORRECTION

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PATENT NO. : 7,088,742  
APPLICATION NO. : 10/008,658  
ISSUE DATE : 8/8/2006  
INVENTOR(S) : Oliver et al.

It is certified that an error appears or errors appear in the above-identified patent and that said Letters Patent is hereby corrected as shown below:

At Claim 4, Column 9, line 18, replace the phrase "having first number of timeslots" with the phrase --having a first number of timeslots--

At Claim 11, Column 12, line 46, replace the phrase "number of timeslots each timeslot" with the phrase --number of timeslots, each timeslot--; at line 65, replace the phrase "wherein a timeslots" with the phrase --wherein a timeslot--;

At Claim 19, Column 12, line 46, replace the first occurrence of the phrase "a load" with --payload--

At Claim 22, Column 13, line 15, replace the phrase "of the timeslots of the combined mapping the second" with the phrase --of the timeslots of the combined traffic; and mapping the second--

At Claim 25, Column 13, line 46, replace the first occurrence of the phrase "a load" with --payload--; at line 49, replace the first occurrence of the term "(N<sub>1</sub>)" with --(N<sub>2</sub>)--

At Claim 31, Column 14, line 55, replace the first occurrence of the phrase "less tan" with --less than--

MAILING ADDRESS OF SENDER (Please do not use customer number below):

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This collection of information is required by 37 CFR 1.322, 1.323, and 1.324. The information is required to obtain or retain a benefit by the public which is to file (and by the USPTO to process) an application. Confidentiality is governed by 35 U.S.C. 122 and 37 CFR 1.14. This collection is estimated to take 1.0 hour to complete, including gathering, preparing, and submitting the completed application form to the USPTO. Time will vary depending upon the individual case. Any comments on the amount of time you require to complete this form and/or suggestions for reducing this burden, should be sent to the Chief Information Officer, U.S. Patent and Trademark Office, U.S. Department of Commerce, P.O. Box 1450, Alexandria, VA 22313-1450. DO NOT SEND FEES OR COMPLETED FORMS TO THIS ADDRESS. SEND TO: Attention Certificate of Corrections Branch, Commissioner for Patents, P.O. Box 1450, Alexandria, VA 22313-1450.

If you need assistance in completing the form, call 1-800-PTO-9199 and select option 2.

## EXHIBIT A

Applicant(s)	Oliver	<p style="text-align: center;"><b><u>AMENDMENT AND RESPONSE UNDER 37 C.F.R. § 1.111</u></b></p>
Serial No.	10/008,658	
Filing Date	11/9/2001	
Confirmation No.	7350	
Examiner Name	Salman Ahmed	
Group Art Unit	2666	
Attorney Docket No.	100.344US01	
Title: CONCURRENT TRANSMISSION OF TRAFFIC FROM MULTIPLE COMMUNICATION INTERFACES		

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Applicants have reviewed the Office Action mailed on October 17, 2005. Please amend the above-identified application as follows.

**Amendments to the Claims** are reflected in the listing of claims that begins on page 2 of this paper.

**Remarks** begin on page 16 of this paper.

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**Amendments to the Claims:**

This listing of claims will replace all prior versions and listings of claims in the application:

**Listing of claims:**

1- 9. (Canceled)

10. (Currently Amended) ~~The termination unit of claim 8;~~ A termination unit for use in a digital subscriber line system, comprising:  
a first communication interface adapted for receiving first traffic having a first number of timeslots, each timeslot corresponding to an incremental bit rate, wherein a number ( $N_1$ ) of timeslots used for payload is less than or equal to the first number of timeslots;  
a second communication interface adapted for receiving second traffic, wherein the second traffic has a bit rate equal to some multiple ( $N_2$ ) of the incremental bit rate;  
and  
a third communication interface for coupling to a digital subscriber line and for providing a combined traffic having a second number of timeslots, each timeslot corresponding to the incremental bit rate, wherein the second number of timeslots is greater than or equal to  $N_1 + N_2$ ;  
wherein the termination unit is adapted to map the timeslots of the first traffic to a first portion of the timeslots of the combined traffic;  
wherein the termination unit is adapted to map the second traffic to a second portion of the timeslots of the combined traffic; and  
wherein the first portion of the timeslots of the combined traffic begins at a first timeslot of the combined traffic.

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11. (Currently Amended) ~~The termination unit of claim 8;~~ A termination unit for use in a digital subscriber line system, comprising:  
a first communication interface adapted for receiving first traffic having a first number of timeslots, each timeslot corresponding to an incremental bit rate, wherein a number ( $N_1$ ) of timeslots used for payload is less than or equal to the first number of timeslots;  
a second communication interface adapted for receiving second traffic, wherein the second traffic has a bit rate equal to some multiple ( $N_2$ ) of the incremental bit rate;  
and  
a third communication interface for coupling to a digital subscriber line and for providing a combined traffic having a second number of timeslots, each timeslot corresponding to the incremental bit rate, wherein the second number of timeslots is greater than or equal to  $N_1 + N_2$ ;  
wherein the termination unit is adapted to map the timeslots of the first traffic to a first portion of the timeslots of the combined traffic;  
wherein the termination unit is adapted to map the second traffic to a second portion of the timeslots of the combined traffic; and  
wherein when  $N_1$  is equal to the first number of timeslots, the payload of the first traffic begins at the first timeslot of the combined traffic when  $N_2$  is equal to the first number of timeslots.
12. (Original) The termination unit of claim 11, wherein the second portion of the timeslots of the combined traffic begins at an  $N_1$ th + 1 timeslot when  $N_1$  is equal to the first number of timeslots.

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13. (Original) The termination unit of claim 10, wherein the payload of the first traffic begins at a second timeslot of the combined traffic when  $N_1$  is less than the first number of timeslots.
14. (Original) The termination unit of claim 13, wherein the first timeslot of the combined traffic corresponds to framing information.
15. (Currently Amended) ~~The termination unit of claim 8;~~ A termination unit for use in a digital subscriber line system, comprising:  
a first communication interface adapted for receiving first traffic having a first number of timeslots, each timeslot corresponding to an incremental bit rate, wherein a number ( $N_1$ ) of timeslots used for payload is less than or equal to the first number of timeslots;  
a second communication interface adapted for receiving second traffic, wherein the second traffic has a bit rate equal to some multiple ( $N_2$ ) of the incremental bit rate;  
and  
a third communication interface for coupling to a digital subscriber line and for providing a combined traffic having a second number of timeslots, each timeslot corresponding to the incremental bit rate, wherein the second number of timeslots is greater than or equal to  $N_1 + N_2$ ;  
wherein the termination unit is adapted to map the timeslots of the first traffic to a first portion of the timeslots of the combined traffic;  
wherein the termination unit is adapted to map the second traffic to a second portion of the timeslots of the combined traffic; and  
wherein the first portion of the timeslots is contiguous.



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16. (Currently Amended) ~~The termination unit of claim 8,~~A termination unit for use in a digital subscriber line system, comprising:  
a first communication interface adapted for receiving first traffic having a first number of timeslots, each timeslot corresponding to an incremental bit rate, wherein a number ( $N_1$ ) of timeslots used for payload is less than or equal to the first number of timeslots;  
a second communication interface adapted for receiving second traffic, wherein the second traffic has a bit rate equal to some multiple ( $N_2$ ) of the incremental bit rate;  
and  
a third communication interface for coupling to a digital subscriber line and for providing a combined traffic having a second number of timeslots, each timeslot corresponding to the incremental bit rate, wherein the second number of timeslots is greater than or equal to  $N_1 + N_2$ ;  
wherein the termination unit is adapted to map the timeslots of the first traffic to a first portion of the timeslots of the combined traffic;  
wherein the termination unit is adapted to map the second traffic to a second portion of the timeslots of the combined traffic; and  
wherein  $N_1$  is less than the first number of timeslots and wherein a timeslot of the first traffic is mapped to its corresponding timeslot of the combined traffic for at least  $N_1 + 1$  timeslots of the first traffic.
17. (Original) The termination unit of claim 16, wherein one timeslot of the first traffic is mapped to a timeslot of the combined traffic other than its corresponding timeslot.
18. (Original) The termination unit of claim 17, the one timeslot corresponds to signaling information.

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19. (Original) The termination unit of claim 16, wherein a timeslot of the first traffic is mapped to its corresponding timeslot of the combined traffic for  $N_1 + 2$  timeslots of the first traffic.
20. (Currently Amended) ~~The termination unit of claim 8;~~ A termination unit for use in a digital subscriber line system, comprising:  
a first communication interface adapted for receiving first traffic having a first number of timeslots, each timeslot corresponding to an incremental bit rate, wherein a number ( $N_1$ ) of timeslots used for payload is less than or equal to the first number of timeslots;  
a second communication interface adapted for receiving second traffic, wherein the second traffic has a bit rate equal to some multiple ( $N_2$ ) of the incremental bit rate;  
and  
a third communication interface for coupling to a digital subscriber line and for providing a combined traffic having a second number of timeslots, each timeslot corresponding to the incremental bit rate, wherein the second number of timeslots is greater than or equal to  $N_1 + N_2$ ;  
wherein the termination unit is adapted to map the timeslots of the first traffic to a first portion of the timeslots of the combined traffic;  
wherein the termination unit is adapted to map the second traffic to a second portion of the timeslots of the combined traffic; and  
wherein  $N_1$  is equal to the first number of timeslots and wherein a timeslot of the first traffic is mapped to its corresponding timeslot of the combined traffic for each timeslot of the first traffic.
21. (Currently Amended) ~~The termination unit of claim 8;~~ A termination unit for use in a digital subscriber line system, comprising:

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a first communication interface adapted for receiving first traffic having a first number of timeslots, each timeslot corresponding to an incremental bit rate, wherein a number ( $N_1$ ) of timeslots used for payload is less than or equal to the first number of timeslots;  
a second communication interface adapted for receiving second traffic, wherein the second traffic has a bit rate equal to some multiple ( $N_2$ ) of the incremental bit rate;  
and  
a third communication interface for coupling to a digital subscriber line and for providing a combined traffic having a second number of timeslots, each timeslot corresponding to the incremental bit rate, wherein the second number of timeslots is greater than or equal to  $N_1 + N_2$ ;  
wherein the termination unit is adapted to map the timeslots of the first traffic to a first portion of the timeslots of the combined traffic;  
wherein the termination unit is adapted to map the second traffic to a second portion of the timeslots of the combined traffic, and  
wherein the first traffic is E1 traffic having 32 timeslots (0-31), wherein timeslot 0 of the first traffic corresponds to framing information and wherein timeslot 16 of the first traffic corresponds to signaling information.

22. (Original) The termination unit of claim 21, wherein the combined traffic is SHDSL traffic having 36 timeslots (0-35), wherein timeslot 0 of the combined traffic corresponds to timeslot 0 of the first traffic, and wherein timeslot 16 of the combined traffic corresponds to timeslot 16 of the first traffic when  $N_1$  is less than or equal to 30 and greater than or equal to 15.

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23. (Original) The termination unit of claim 22, wherein timeslot 16 of the combined traffic further corresponds to timeslot 16 of the first traffic when  $N_1$  is less than 15 if  $N_1 + N_2$  is greater than or equal to 15.
24. (Original) The termination unit of claim 22, wherein timeslot 16 of the first traffic corresponds to timeslot  $N_1 + N_2 + 1$  of the combined traffic when  $N_1$  is greater than or equal to 1 and  $N_1 + N_2$  is less than or equal to 15.
25. (Canceled)
26. (Currently Amended) The termination unit of claim ~~28~~25, further comprising:  
wherein the first communication interface is a G.703/704 interface;  
wherein the second communication interface is an Nx64Kbps serial dataport interface;  
wherein the incremental bit rate is 64Kbps;  
wherein the first number of timeslots equals 32 (timeslots 0-31); and  
wherein the second number of timeslots is less than or equal to 36 (timeslots 0-35).
27. (Original) The termination unit of claim 26, wherein the Nx64Kbps serial dataport interface is selected from the group consisting of a V.35 interface, a V.36 interface, an X.21 interface and an RS-530 interface.
28. (Currently Amended) ~~The termination unit of claim 26, further comprising:~~  
A termination unit for use in a digital subscriber line system, comprising:  
a first communication interface adapted for receiving pulse code modulated voice traffic  
and/or packetized data traffic having a first number of timeslots, each timeslot  
corresponding to an incremental bit rate, wherein a number ( $N_1$ ) of timeslots used  
for payload is less than or equal to the first number of timeslots;

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a second communication interface adapted for receiving serial data traffic, wherein the serial data traffic has a bit rate equal to some multiple ( $N_2$ ) of the incremental bit rate; and

a third communication interface for coupling to a single-pair high bit-rate digital subscriber line and for providing a combined traffic having a second number of timeslots, each timeslot corresponding to the incremental bit rate, wherein the second number of timeslots is greater than or equal to  $N_1 + N_2$ ;

wherein the termination unit is adapted to map the timeslots of the pulse code modulated voice traffic and/or packetized data traffic to a first portion of the timeslots of the combined traffic;

wherein the termination unit is adapted to map the serial data traffic to a second portion of the timeslots of the combined traffic; and

wherein the termination unit is adapted to map timeslot 0 of the pulse code modulated voice traffic and/or packetized data traffic to timeslot 0 of the combined traffic;

wherein the termination unit is adapted to map timeslot 16 of the pulse code modulated voice traffic and/or packetized data traffic to timeslot 16 of the combined traffic if  $N_1 + N_2$  is greater than or equal to 15;

wherein the termination unit is adapted to map timeslot 16 of the pulse code modulated voice traffic and/or packetized data traffic to timeslot ( $N_1 + N_2 + 1$ ) of the combined traffic if  $N_1 + N_2$  is less than 15;

wherein the termination unit is adapted to map remaining timeslots of the pulse code modulated voice traffic and/or packetized data traffic to corresponding timeslots of the combined traffic;

wherein the termination unit is adapted to map the serial data traffic to timeslots of the combined traffic beginning at timeslot ( $N_1 + 1$ ) when  $N_1$  is less than 15;

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wherein the termination unit is adapted to map the serial data traffic to timeslots of the combined traffic beginning at timeslot ( $N_1 + 2$ ) when  $N_1$  is greater than or equal to 15; and

wherein mapping of the serial data traffic skips timeslot 16 of the combined traffic when  $N_1$  is less than 15 and  $N_1 + N_2$  is greater than or equal to 15.

29- 37. (Canceled)

38. (Currently Amended) ~~The method of claim 36,~~ A method of communicating across a digital subscriber line system, comprising:  
receiving first traffic having a first number of timeslots, each timeslot corresponding to an incremental bit rate, wherein a number ( $N_1$ ) of timeslots used for payload is less than or equal to the first number of timeslots;  
receiving second traffic, wherein the second traffic has a bit rate equal to some multiple ( $N_2$ ) of the incremental bit rate;  
combining the first traffic and the second traffic to generate a combined traffic having a second number of timeslots, each timeslot corresponding to the incremental bit rate, wherein the second number of timeslots is greater than or equal to  $N_1 + N_2$ ;  
mapping the timeslots of the first traffic to a first portion of the timeslots of the combined traffic; and  
mapping the second traffic to a second portion of the timeslots of the combined traffic;  
wherein the first portion of the timeslots of the combined traffic begins at a first timeslot of the combined traffic.
39. (Currently Amended) ~~The method of claim 36,~~ A method of communicating across a digital subscriber line system, comprising:

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receiving first traffic having a first number of timeslots, each timeslot corresponding to an incremental bit rate, wherein a number ( $N_1$ ) of timeslots used for payload is less than or equal to the first number of timeslots;  
receiving second traffic, wherein the second traffic has a bit rate equal to some multiple ( $N_2$ ) of the incremental bit rate;  
combining the first traffic and the second traffic to generate a combined traffic having a second number of timeslots, each timeslot corresponding to the incremental bit rate, wherein the second number of timeslots is greater than or equal to  $N_1 + N_2$ ;  
mapping the timeslots of the first traffic to a first portion of the timeslots of the combined traffic; and  
mapping the second traffic to a second portion of the timeslots of the combined traffic;  
wherein when  $N_1$  is equal to the first number of timeslots, the payload of the first traffic begins at the first timeslot of the combined traffic ~~when  $N_1$  is equal to the first number of timeslots.~~

40. (Original) The method of claim 39, wherein the second portion of the timeslots of the combined traffic begins at an  $N_1$ th + 1 timeslot when  $N_1$  is equal to the first number of timeslots.
41. (Original) The method of claim 38, wherein the payload of the first traffic begins at a second timeslot of the combined traffic when  $N_1$  is less than the first number of timeslots.
42. (Original) The method of claim 41, wherein the first timeslot of the combined traffic corresponds to framing information.
43. (Currently Amended) ~~The method of claim 36,~~ A method of communicating across a digital subscriber line system, comprising:

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receiving first traffic having a first number of timeslots, each timeslot corresponding to an incremental bit rate, wherein a number ( $N_1$ ) of timeslots used for payload is less than or equal to the first number of timeslots;  
receiving second traffic, wherein the second traffic has a bit rate equal to some multiple ( $N_2$ ) of the incremental bit rate;  
combining the first traffic and the second traffic to generate a combined traffic having a second number of timeslots, each timeslot corresponding to the incremental bit rate, wherein the second number of timeslots is greater than or equal to  $N_1 + N_2$ ;  
mapping the timeslots of the first traffic to a first portion of the timeslots of the combined traffic; and  
mapping the second traffic to a second portion of the timeslots of the combined traffic;  
wherein the first portion of the timeslots is contiguous.

44. (Currently Amended) ~~The method of claim 36,~~ A method of communicating across a digital subscriber line system, comprising:  
receiving first traffic having a first number of timeslots, each timeslot corresponding to an incremental bit rate, wherein a number ( $N_1$ ) of timeslots used for payload is less than or equal to the first number of timeslots;  
receiving second traffic, wherein the second traffic has a bit rate equal to some multiple ( $N_2$ ) of the incremental bit rate;  
combining the first traffic and the second traffic to generate a combined traffic having a second number of timeslots, each timeslot corresponding to the incremental bit rate, wherein the second number of timeslots is greater than or equal to  $N_1 + N_2$ ;  
mapping the timeslots of the first traffic to a first portion of the timeslots of the combined traffic;  
mapping the second traffic to a second portion of the timeslots of the combined traffic;



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wherein  $N_1$  is less than the first number of timeslots and wherein a timeslot of the first traffic is mapped to its corresponding timeslot of the combined traffic for at least  $N_1 + 1$  timeslots of the first traffic.

45. (Original) The method of claim 44, wherein one timeslot of the first traffic is mapped to a timeslot of the combined traffic other than its corresponding timeslot.
46. (Original) The method of claim 45, wherein the one timeslot corresponds to signaling information.
47. (Original) The method of claim 44, wherein a timeslot of the first traffic is mapped to its corresponding timeslot of the combined traffic for  $N_1 + 2$  timeslots of the first traffic.
48. (Currently Amended) ~~The method of claim 36,~~ A method of communicating across a digital subscriber line system, comprising:  
receiving first traffic having a first number of timeslots, each timeslot corresponding to an incremental bit rate, wherein a number ( $N_1$ ) of timeslots used for payload is less than or equal to the first number of timeslots;  
receiving second traffic, wherein the second traffic has a bit rate equal to some multiple ( $N_2$ ) of the incremental bit rate;  
combining the first traffic and the second traffic to generate a combined traffic having a second number of timeslots, each timeslot corresponding to the incremental bit rate, wherein the second number of timeslots is greater than or equal to  $N_1 + N_2$ ;  
mapping the timeslots of the first traffic to a first portion of the timeslots of the combined traffic; and  
mapping the second traffic to a second portion of the timeslots of the combined traffic;

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wherein  $N_1$  is equal to the first number of timeslots and wherein a timeslot of the first traffic is mapped to its corresponding timeslot of the combined traffic for each timeslot of the first traffic.

49. (Currently Amended) ~~The method of claim 36;~~ A method of communicating across a digital subscriber line system, comprising:  
receiving first traffic having a first number of timeslots, each timeslot corresponding to an incremental bit rate, wherein a number ( $N_1$ ) of timeslots used for payload is less than or equal to the first number of timeslots;  
receiving second traffic, wherein the second traffic has a bit rate equal to some multiple ( $N_2$ ) of the incremental bit rate;  
combining the first traffic and the second traffic to generate a combined traffic having a second number of timeslots, each timeslot corresponding to the incremental bit rate, wherein the second number of timeslots is greater than or equal to  $N_1 + N_2$ ;  
mapping the timeslots of the first traffic to a first portion of the timeslots of the combined traffic; and  
mapping the second traffic to a second portion of the timeslots of the combined traffic;  
wherein the first traffic is E1 traffic having 32 timeslots (0-31), wherein timeslot 0 of the first traffic corresponds to framing information and wherein timeslot 16 of the first traffic corresponds to signaling information.
50. (Original) The method of claim 49, wherein the combined traffic is SHDSL traffic having 36 timeslots (0-35), wherein timeslot 0 of the combined traffic corresponds to timeslot 0 of the first traffic, and wherein timeslot 16 of the combined traffic corresponds to timeslot 16 of the first traffic when  $N_1$  is less than or equal to 30 and greater than or equal to 15.

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Attorney Docket No. 100.344US01

Title: CONCURRENT TRANSMISSION OF TRAFFIC FROM MULTIPLE  
COMMUNICATION INTERFACES

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51. (Original) The method of claim 50, wherein timeslot 16 of the combined traffic further corresponds to timeslot 16 of the first traffic when  $N_I$  is less than 15 if  $N_I + N_2$  is greater than or equal to 15.
52. (Original) The method of claim 50, wherein timeslot 16 of the first traffic corresponds to timeslot  $N_I + N_2 + 1$  of the combined traffic when  $N_I$  is greater than or equal to 1 and  $N_I + N_2$  is less than or equal to 15.

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### **REMARKS**

Applicant has reviewed the Office Action mailed on October 17, 2005 as well as the art cited. Claims 1-9, 25, 29-37 have been canceled. Claims 10, 11, 15, 16, 20, 21, 26, 28, 38, 39, 43, 44, 48, and 49 have been amended in this response. Claims 10-24, 26-28, and 38-52 are currently pending in this application.

#### **Allowable Subject Matter**

Claims 10-24, 27, 28, and 38-52 were objected to as being dependent upon a rejected base claim, but were indicated to be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

Applicant thanks the Examiner for identifying these claims as allowable subject matter.

With regard to claims 10, 11, 15, 16, 20, 21 these claims have been rewritten in independent form, including all of the limitations of the base claim 8, and are now allowable. Claims 13 and 14, either directly or indirectly, depend on and further define the allowable claim 10, and are therefore allowable. Claim 12, either directly or indirectly, depends on and further defines the allowable claim 11, and is therefore allowable. Claims 17, 18 and 19, either directly or indirectly, depend on and further define the allowable claim 16, and are therefore allowable. Claims 22, 23 and 24, either directly or indirectly, depend on and further define the allowable claim 21, and are therefore allowable.

With regard to claim 28, this claim has been rewritten in independent form, including all of the limitations of the base claim 25, and is now allowable. Claim 26 has been amended to depend from the amended claim 28, and is therefore allowable. Claim 27, either directly or indirectly, now depends on and further defines the allowable claim 28, and is therefore allowable.

With regard to claims 38, 39, 43, 44, 48, and 49, these claims have been rewritten in independent form, including all of the limitations of the base claim 36, and are now allowable. With regard to claim 48, the claim has been further amended to correct a typographical error. Claims 41 and 42, either directly or indirectly, depend on and further define the allowable claim 38, and are therefore allowable. Claim 40, either directly or indirectly, depends on and further

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defines the allowable claim 39, and is therefore allowable. Claims 45, 46 and 47, either directly or indirectly, depend on and further define the allowable claim 44, and are therefore allowable. Claims 50, 51 and 52, either directly or indirectly, depend on and further define the allowable claim 49, and are therefore allowable.

*Rejections Under 35 U.S.C. § 102*

Claims 1-7, and 29-35 were rejected under 35 USC § 102(a) as being anticipated by DeNap et al., (U.S. Patent No. 6,490,273). Applicant respectfully traverses this rejection.

In order to expedite the issuance of those claims identified as having allowable subject matter by the Examiner, Applicant cancels claims 1-7 and 29-35 without prejudice and without any intent to surrender the scope of embodiments described within those claims. Applicant expressly reserves the right to assert the canceled claims, as well as additional claims, through the prosecution of continuing applications.

Applicant respectfully requests the Examiner to withdraw this rejection.

*Rejections Under 35 U.S.C. § 103*

Claims 8, 9, 25, 26, 36 and 37 were rejected under 35 USC § 103(a) as being unpatentable over DeNap et al. (U.S. Patent No. 6,490,273) in view of "A Technical Discussion of SHDSL and Its Benefits" and in view of Lozano (U.S. Patent No. 6,920,118). Applicant respectfully traverses this rejection.

In order to expedite the issuance of those claims identified as having allowable subject matter by the Examiner, Applicant cancels claims 8, 9, 25, 36 and 37 without prejudice and without any intent to surrender the scope of embodiments described within those claims. Applicant expressly reserves the right to assert the canceled claims, as well as additional claims, through the prosecution of continuing applications.

With regards to claim 26, the claim has been amended to depend on and further define claim 28 and is therefore allowable for at least the reasons discussed above.

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Attorney Docket No. 100.344US01

Title: CONCURRENT TRANSMISSION OF TRAFFIC FROM MULTIPLE  
COMMUNICATION INTERFACES

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Applicant respectfully requests the Examiner to withdraw this rejection.

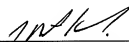
**CONCLUSION**

Applicant respectfully submits that claims 10-24, 26-28, and 38-52 are in condition for allowance and notification to that effect is earnestly requested. If necessary, please charge any additional fees or credit overpayments to Deposit Account No. 502432.

If the Examiner has any questions or concerns regarding this application, please contact the undersigned at 612-455-1687.

Respectfully submitted,

Date: 1/17/2006

  
\_\_\_\_\_  
J. Patrick Kendrick  
Reg. No. 53,109

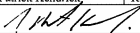
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## EXHIBIT A

Applicant(s)	Jeffrey Oliver	<p style="text-align: center;"><b>FACSIMILE TRANSMITTAL FORM</b></p>
Serial No.	10/008,658	
Filing Date	Nov 9, 2001	
Confirmation No.	7350	
Examiner Name	Salman Ahmed	
Group Art Unit	2666	
Attorney Docket No.	100.344US01	
Title: CONCURRENT TRANSMISSION OF TRAFFIC FROM MULTIPLE COMMUNICATION INTERFACES		

**TOTAL PAGES: 19 pgs. (including cover sheet)**  
**TO CENTRAL FAX – (571) 273-8300**  
**Attention: Examiner Salman Ahmed, Art Unit 2664**

Commissioner for Patents  
P.O. Box 1450  
Alexandria, VA 22313-1450

<b>Enclosures</b>			
The following documents are enclosed:			
1. Response to the Office Action mailed October 17, 2005.			
<b>Please charge any additional fees or credit any overpayments to Deposit Account No. 502432.</b>			
<b>Submitted By</b>			
Name	J. Patrick Kendrick	Reg. No.	53,109
Telephone			(612) 332-4720
Signature			Date
1/17/2006			
Attorneys for Applicant Fogg & Associates, LLC P.O. Box 581339 Minneapolis, MN 55458-1339 T: 612-332-4720 F: 612-332-4731			
CUSTOMER NUMBER: 34206			
<b>Certificate of Transmission</b>			
I certify that this paper, and the above-identified documents, are being transmitted by facsimile to Examiner Salman Ahmed, Group Art Unit 2666 (Facsimile No. 571-273-8300) of the United States Patent and Trademark Office on January 17, 2006			
Name	Louisa Eifrig Pineault	Signature	

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wherein the termination unit is adapted to map the timeslots of the first traffic to a first portion of the timeslots of the combined traffic;

wherein the termination unit is adapted to map the second traffic to a second portion of the timeslots of the combined traffic; and

wherein the first portion of the timeslots of the combined traffic begins at a first timeslot of the combined traffic.

2. The termination unit of claim 1, wherein the payload of the first traffic begins at a second timeslot of the combined traffic when  $N_1$  is less than the first number of timeslots.

3. The termination unit of claim 2, wherein the first timeslot of the combined traffic corresponds to framing information.

4. A termination unit for use in a digital subscriber line system, comprising:

a first communication interface adapted for receiving first traffic having first number of timeslots, each timeslot corresponding to an incremental bit rate, wherein a number ( $N_1$ ) of timeslots used for payload is less than or equal to the first number of timeslots;

a second communication interface adapted for receiving second traffic, wherein the second traffic has a bit rate equal to some multiple ( $N_2$ ) of the incremental bit rate; and

a third communication interface for coupling to a digital subscriber line and for providing a combined traffic having a second number of timeslots, each timeslot corresponding to the incremental bit rate, wherein the second number of timeslots is greater than or equal to  $N_1 + N_2$ ;

wherein the termination unit is adapted to map the timeslots of the first traffic to a first portion of the timeslots of the combined traffic;

wherein the termination unit is adapted to map the second traffic to a second portion of the timeslots of the combined traffic; and

wherein when  $N_1$  is equal to the first number of timeslots, the payload of the first traffic begins at the first timeslot of the combined traffic.

5. The termination unit of claim 4, wherein the second portion of the timeslots of the combined traffic begins at an  $N_1$  th+1 timeslot when  $N_1$  is equal to the first number of timeslots.

6. A termination unit for use in a digital subscriber line system, comprising:

a first communication interface adapted for receiving first traffic having a first number of timeslots, each timeslot corresponding to an incremental bit rate, wherein a number ( $N_1$ ) of timeslots used for payload is less than or equal to the first number of timeslots;

a second communication interface adapted for receiving second traffic, wherein the second traffic has a bit rate equal to some multiple ( $N_2$ ) of the incremental bit rate and

a third communication interface for coupling to a digital subscriber line and for providing a combined traffic having a second number of timeslots, each timeslot corresponding to the incremental bit rate, wherein the second number of timeslots is greater than or equal to  $N_1 + N_2$ ;

wherein the termination unit is adapted to map the timeslots of the first traffic to a first portion of the timeslots of the combined traffic;

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wherein the termination unit is adapted to map the second traffic to a second portion of the timeslots of the combined traffic; and

wherein the first portion of the timeslots is contiguous.

7. A termination unit for use in a digital subscriber line system, comprising:

a first communication interface adapted for receiving first traffic having a first number of timeslots, each timeslot corresponding to an incremental bit rate, wherein a number ( $N_1$ ) of timeslots used for payload is less than or equal to the first number of timeslots;

a second communication interface adapted for receiving second traffic, wherein the second traffic has a bit rate equal to some multiple ( $N_2$ ) of the incremental bit rate; and

a third communication interface for coupling to a digital subscriber line and for providing a combined traffic having a second number of timeslots, each timeslot corresponding to the incremental bit rate, wherein the second number of timeslots is greater than or equal to  $N_1 + N_2$ ;

wherein the termination unit is adapted to map the timeslots of the first traffic to a first portion of the timeslots of the combined traffic;

wherein the termination unit is adapted to map the second traffic to a second portion of the timeslots of the combined traffic; and

wherein  $N_1$  is less than the first number of timeslots and wherein a timeslot of the first traffic is mapped to its corresponding timeslot of the combined traffic for at least  $N_1 + 1$  timeslots of the first traffic.

8. The termination unit of claim 7, wherein one timeslot of the first traffic is mapped to a timeslot of the combined traffic other than its corresponding timeslot.

9. The termination unit of claim 8, the one timeslot corresponds to signaling information.

10. The termination unit of claim 7, wherein a timeslot of the first traffic is mapped to its corresponding timeslot of the combined traffic for  $N_1 + 2$  timeslots of the first traffic.

11. A termination unit for use in a digital subscriber line system, comprising:

a first communication interface adapted for receiving first traffic having a first number of timeslots each timeslot corresponding to an incremental bit rate, wherein a number ( $N_1$ ) of timeslots used for payload is less than or equal to the first number of timeslots;

a second communication interface adapted for receiving a second traffic, wherein the second traffic has a bit rate equal to some multiple ( $N_2$ ) of the incremental bit rate; and

a third communication interface for coupling to a digital subscriber line and for providing a combined traffic having a second number of timeslots, each timeslot corresponding to the incremental bit rate, wherein the second number of timeslots is greater than or equal to  $N_1 + N_2$ ;

wherein the termination unit is adapted to map the timeslots of the first traffic to a first portion of the timeslots of the combined traffic;

wherein the termination unit is adapted to map the second traffic to a second portion of the timeslots of the combined traffic; and

wherein  $N_1$  is equal to the first number of timeslots and wherein a timeslot of the first traffic is mapped to its corresponding timeslot of the combined traffic for each timeslot of the first traffic.



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12. A termination unit for use in a digital subscriber line system, comprising:

- a first communication interface adapted for receiving first traffic having a first number of timeslots, each timeslot corresponding to an incremental bit rate, wherein a number ( $N_1$ ) of timeslots used for payload is less than or equal to the first number of timeslots;
- a second communication interface adapted for receiving second traffic, wherein the second traffic has a bit rate equal to some multiple ( $N_2$ ) of the incremental bit rate; and
- a third communication interface for coupling to a digital subscriber line and for providing a combined traffic having a second number of timeslots, each timeslot corresponding to the incremental bit rate, wherein the second number of timeslots is greater than or equal to  $N_1+N_2$ ;

wherein the termination unit is adapted to map the timeslots of the first traffic to a first portion of the timeslots of the combined traffic;

wherein the termination unit is adapted to map the second traffic to a second portion of the timeslots of the combined traffic; and

wherein the first traffic is E1 traffic having 32 timeslots (0-31), wherein timeslot 0 of the first traffic corresponds to framing information and wherein timeslot 16 of the first traffic corresponds to signaling information.

13. The termination unit of claim 12, wherein the combined traffic is SHDSL traffic having 36 timeslots (0-35), wherein timeslot 0 of the combined traffic corresponds to timeslot 0 of the first traffic, and wherein timeslot 16 of the combined traffic corresponds to timeslot 16 of the first traffic when  $N_1$  is less than or equal to 30 and greater than or equal to 15.

14. The termination unit of claim 13, wherein timeslot 16 of the combined traffic further corresponds to timeslot 16 of the first traffic when  $N_1$  is less than 15 if  $N_1+N_2$  is greater than or equal to 15.

15. The termination unit of claim 13, wherein timeslot 16 of the first traffic corresponds to timeslot  $N_1+N_2+1$  of the combined traffic when  $N_1$  is greater than or equal to 1 and  $N_1+N_2$  is less than or equal to 15.

16. A termination unit for use in a digital subscriber line system, comprising:

- a first communication interface adapted for receiving pulse code modulated voice traffic and/or packetized data traffic having a first number of timeslots, each timeslot corresponding to an incremental bit rate, wherein a number ( $N_1$ ) of timeslots used for payload is less than or equal to the first number of timeslots;

a second communication interface adapted for receiving serial data traffic, wherein the serial data traffic has a bit rate equal to some multiple ( $N_2$ ) of the incremental bit rate; and

a third communication interface for coupling to a single-pair high bit-rate digital subscriber line and for providing a combined traffic having a second number of timeslots, each timeslot corresponding to the incremental bit rate, wherein the second number of timeslots is greater than or equal to  $N_1+N_2$ ;

wherein the termination unit is adapted to map the timeslots of the pulse code modulated voice traffic and/or packetized data traffic to a first portion of the timeslots of the combined traffic;

wherein the termination unit is adapted to map the serial data traffic to a second portion of the timeslots of the combined traffic; and

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wherein the termination unit is adapted to map timeslot 0 of the pulse code modulated voice traffic and/or packetized data traffic to timeslot 0 of the combined traffic; wherein the termination unit is adapted to map timeslot 16 of the pulse code modulated voice traffic and/or packetized data traffic to timeslot 16 of the combined traffic if  $N_1+N_2$  is greater than or equal to 15;

wherein the termination unit is adapted to map timeslot 16 of the pulse code modulated voice traffic and/or packetized data traffic to timeslot ( $N_1+N_2+1$ ) of the combined traffic if  $N_1+N_2$  is less than 15;

wherein the termination unit is adapted to map remaining timeslots of the pulse code modulated voice traffic and/or packetized data traffic to corresponding timeslots of the combined traffic;

wherein the termination unit is adapted to map the serial data traffic to timeslots of the combined traffic beginning at timeslots ( $N_1+1$ ) when  $N_1$  is less than 15;

wherein the termination unit is adapted to map the serial data traffic to timeslots of the combined traffic beginning at timeslot ( $N_1+2$ ) when  $N_1$  is greater than or equal to 15; and

wherein mapping of the serial data traffic skips timeslot 16 of the combined traffic when  $N_1$  is less than 15 and  $N_1+N_2$  is greater than or equal to 15.

17. The termination unit of claim 16, further comprising: wherein the first communication interface is a G.703/704 interface;

wherein the second communication interface is an Nx64 Kbps serial dataport interface;

wherein the incremental bit rate is 64 Kbps;

wherein the first number of timeslots equals 32 (timeslots 0-31); and

wherein the second number of timeslots is less than or equal to 36 (timeslots 0-35).

18. The termination unit of claim 17, wherein the Nx64 Kbps serial dataport interface is selected from the group consisting of a V.35 interface, a V.36 interface, an X.21 interface and an RS-530 interface.

19. A method of communicating across a digital subscriber line system, comprising:

receiving first traffic having a first number of timeslots, each timeslot corresponding to an incremental bit rate wherein a number  $N_1$  of timeslots used for a load is less than or equal to the first number of timeslots;

receiving second traffic, wherein the second traffic has a bit rate equal to some multiple ( $N_2$ ) of the incremental bit rate;

combining the first traffic and the second traffic to generate a combined traffic having a second number of timeslots, each timeslot corresponding to the incremental bit rate, wherein the second number of timeslots is greater than or equal to  $N_1+N_2$ ;

mapping the timeslots of the first traffic to a first portion of the timeslots of the combined traffic; and

mapping the second traffic to a second portion of the timeslots of the combined traffic;

wherein the first portion of the timeslots of the combined traffic begins at a first timeslot of the combined traffic.

20. The method of claim 19, wherein the payload of the first traffic begins at a second timeslot of the combined traffic when  $N_1$  is less than the first number of timeslots.

21. The method of claim 20, wherein the first timeslot of the combined traffic corresponds to framing information.

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22. A method of communicating across a digital subscriber line system, comprising:

receiving first traffic having a first number of timeslots, each timeslot corresponding to an incremental bit rate, wherein a number ( $N_1$ ) of timeslots used for payload is less than or equal to the first number of timeslots;

receiving second traffic, wherein the second traffic has a bit rate equal to some multiple ( $N_2$ ) of the incremental bit rate;

combining the first traffic and the second traffic to generate a combined traffic having a second number of timeslots, each timeslot corresponding to the incremental bit rate, wherein the second number of timeslots is greater than or equal to  $N_1 + N_2$ ;

mapping the timeslots of the first traffic to a first portion of the timeslots of the combined mapping the second traffic to a second portion of the timeslots of the combined traffic;

wherein when  $N_1$  is equal to the first number of timeslots, the payload of the first traffic begins at the first timeslot of the combined traffic.

23. The method of claim 22, wherein the second portion of the timeslots of the combined traffic begins at an  $N_1 + 1$  timeslot when  $N_1$  is equal to the first number of timeslots.

24. A method of communicating across a digital subscriber line system, comprising:

receiving first traffic having a first number of timeslots, each timeslot corresponding to an incremental bit rate, wherein a number ( $N_1$ ) of timeslots used for payload is less than or equal to the first number of timeslots;

receiving second traffic, wherein the second traffic has a bit rate equal to some multiple ( $N_2$ ) of the incremental bit rate;

combining the first traffic and the second traffic to generate a combined traffic having a second number of timeslots, each timeslot corresponding to the incremental bit rate, wherein the second number of timeslots is greater than or equal to  $N_1 + N_2$ ;

mapping the timeslots of the first traffic to a first portion of the timeslots of the combined traffic; and mapping the second traffic to a second portion of the timeslots of the combined traffic;

wherein the first portion of the timeslots is contiguous.

25. A method of communicating across a digital subscriber line system, comprising:

receiving first traffic having a first number of timeslots, each timeslot corresponding to an incremental bit rate wherein a number ( $N_1$ ) of timeslots used for a load is less than or equal to the first number of timeslots;

receiving second traffic, wherein the second traffic has a bit rate equal to some multiple ( $N_2$ ) of the incremental bit rate;

combining the first traffic and the second traffic to generate a combined traffic having a second number of timeslots, each timeslot corresponding to the incremental bit rate, wherein the second number of timeslots is greater than or equal to  $N_1 + N_2$ ;

mapping the timeslots of the first traffic to a first portion of the timeslots of the combined traffic;

mapping the second traffic to a second portion of the timeslots of the combined traffic;

wherein  $N_1$  is less than the first number of timeslots and wherein a timeslot of the first traffic is mapped to its corresponding timeslot of the combined traffic for at least  $N_1 + 1$  timeslots of the first traffic.

26. The method of claim 25, wherein one timeslot of the first traffic is mapped to a timeslot of the combined traffic other than its corresponding timeslot.

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27. The method of claim 26, wherein the one timeslot corresponds to signaling information.

28. The method of claim 25, wherein a timeslot of the first traffic is mapped to its corresponding timeslot of the combined traffic for  $N_1 + 2$  timeslots of the first traffic.

29. A method of communicating across a digital subscriber line system, comprising:

receiving first traffic having a first number of timeslots, each timeslot corresponding to an incremental bit rate, wherein a number ( $N_1$ ) of timeslots used for payload is less than or equal to the first number of timeslots;

receiving second traffic, wherein the second traffic has a bit rate equal to some multiple ( $N_2$ ) of the incremental bit rate;

combining the first traffic and the second traffic to generate a combined traffic having a second number of timeslots, each timeslot corresponding to the incremental bit rate, wherein the second number of timeslots is greater than or equal to  $N_1 + N_2$ ;

mapping the timeslots of the first traffic to a first portion of the timeslots of the combined traffic; and

mapping the second traffic to a second portion of the timeslots of the combined traffic;

wherein  $N_1$  is equal to the first number of timeslots and wherein a timeslot of the first traffic is mapped to its corresponding timeslot of the combined traffic for each timeslots of the first traffic.

30. A method of communicating across a digital subscriber line system, comprising:

receiving first traffic having a first number of timeslots, each timeslot corresponding to an incremental bit rate, wherein a number ( $N_1$ ) of timeslots used for payload is less than or equal to the first number of timeslots;

receiving second traffic, wherein the second traffic has a bit rate equal to some multiple ( $N_2$ ) of the incremental bit rate;

combining the first traffic and the second traffic to generate a combined traffic having a second number of timeslots, each timeslot corresponding to the incremental bit rate, wherein the second number of timeslots is greater than or equal to  $N_1 + N_2$ ;

mapping the timeslots of the first traffic to a first portion of the timeslots of the combined traffic; and

mapping the second traffic to a second portion of the timeslots of the combined traffic;

wherein the first traffic is E1 traffic having 32 timeslots (0-31), wherein timeslot 0 of the first traffic corresponds to framing information and wherein timeslot 16 of the first traffic corresponds to signaling information.

31. The method of claim 30, wherein the combined traffic is SHDSL traffic having 36 timeslots (0-35), wherein timeslot 0 of the combined traffic corresponds to timeslot 0 of the first traffic, and wherein timeslot 16 of the combined traffic corresponds to timeslot 16 of the first traffic when  $N_1$  is less than or equal to 30 and greater than or equal to 15.

32. The method of claim 31, wherein timeslot 16 of the combined traffic further corresponds to timeslot 16 of the first traffic when  $N_1$  is less than 15 if  $N_1 + N_2$  is greater than or equal to 15.

33. The method of claim 31, wherein timeslot 16 of the first traffic corresponds to timeslot  $N_1 + N_2 + 1$  of the combined traffic when  $N_1$  is greater than or equal to 1 and  $N_1 + N_2$  is less than or equal to 15.

\* \* \* \* \*